

Amendments to the Claims

1-68. (Canceled)

69. (Currently Amended) A process comprising:

- (a) derivatizing a carbon nanotube with a diazonium specie, ~~wherein derivation occurs along the sidewall of the nanotube;~~ and
- (b) covalently attaching a molecular wire to the derivatized carbon nanotube.

70. (Currently Amended) A process comprising:

- (a) derivatizing a carbon nanotube with a diazonium specie, ~~wherein derivation occurs along the sidewall of the nanotube;~~ and
- (b) covalently attaching a molecular switch to the derivatized carbon nanotube.

71. (Previously Presented) The process of claim 69, wherein the carbon nanotube is a single-wall carbon nanotube.

72. (Previously Presented) The process of claim 69 further comprising connecting a molecular electronic device to the molecular wire.

73. (Previously Presented) The process of claim 69, wherein the molecular wire comprises an oligo(phenylene ethynylene) molecular wire.

74. (Withdrawn) A product comprising:

- (a) derivatized carbon nanotube; and
- (b) a molecular wire covalently attaching to the derivatized carbon nanotube.

75. (Withdrawn) A product comprising:

- (a) derivatized carbon nanotube; and
- (b) a molecular switch covalently attaching to the derivatized carbon nanotube.

76. (Withdrawn) The product of claim 74, wherein the carbon nanotube is a single-wall carbon nanotube.
77. (Withdrawn) The product of claim 74 further comprising a molecular electronic device connected to the molecular wire.
78. (Withdrawn) The product of claim 74, wherein the molecular wire comprises an oligo(phenylene ethynylene) molecular wire.
- 79-84. (Canceled)
85. (Currently amended) A method for derivatizing carbon nanotubes comprising:
- (a) preparing an assembly, wherein
 - (i) the assembly comprises a first plurality of carbon nanotubes and a second plurality of carbon nanotubes; and
 - (ii) wherein the carbon nanotubes in the first plurality and the carbon nanotubes in the second plurality can be individually addressed electronically;
 - (b) immersing the assembly in a diazonium specie; and
 - (c) applying a negative potential to the assembly to cause the first plurality to essentially come in contact with the second plurality; and wherein
 - (~~d~~) applying said negative potential facilitates an electrochemically reacting reaction of the assembly with the diazonium specie so as to derivatize the sidewalls of the at least one of the first plurality and second plurality of nanotubes; and
 - (~~e~~) ~~connecting functionalized molecules to the assembly.~~
86. (Currently amended) The method of claim 85, wherein the ~~functionalized molecules~~ diazonium specie comprise molecules that function in a capacity selected from the group consisting of molecular switches and molecular wires.

87-93. (Canceled)

94. (Withdrawn) A product made by the process comprising:
- (a) preparing an assembly, wherein
 - (i) the assembly comprises a first plurality of carbon nanotubes and a second plurality of carbon nanotubes; and
 - (ii) wherein the carbon nanotubes in the first plurality and the carbon nanotubes in the second plurality can be individually addressed electronically;
 - (b) immersing the assembly in a diazonium specie;
 - (c) applying a negative potential to the assembly to cause the first plurality to essentially come in contact with the second plurality;
 - (d) electrochemically reacting the assembly with the diazonium specie; and
 - (e) connecting functionalized molecules to the assembly.
95. (Withdrawn) The product of claim 94, wherein the functionalized molecules comprise molecules that function in a capacity selected from the group consisting of molecular switches and molecular wires.
96. (Withdrawn) A product made by the process comprising:
- (a) preparing an assembly, wherein
 - (i) the assembly comprises a first plurality of carbon nanotubes and a second plurality of carbon nanotubes; and
 - (ii) wherein the carbon nanotubes in the first plurality and the carbon nanotubes in the second plurality can be individually addressed electronically;
 - (b) immersing the assembly in a diazonium specie;
 - (c) applying a negative potential to the assembly to cause the first plurality to essentially come in contact with the second plurality;
 - (d) electrochemically reacting the assembly with the diazonium specie; and
 - (e) operatively connecting molecular electronic devices to the assembly.

97-129. (Canceled)

- 130. (Previously Presented) The process of claim 71 further comprising connecting a molecular electronic device to the molecular wire.
- 131. (Previously Presented) The process of claim 71, wherein the molecular wire comprises an oligo(phenylene ethynylene) molecular wire.
- 132. (Previously Presented) The process of claims 70, wherein the carbon nanotube is a single-wall carbon nanotube.
- 133. (Withdrawn) The product of claim 76 further comprising a molecular electronic device connected to the molecular wire.
- 134. (Withdrawn) The product of claim 76, wherein the molecular wire comprises an oligo(phenylene ethynylene) molecular wire.
- 135. (Withdrawn) The product of claim 75, wherein the carbon nanotube is a single-wall carbon nanotube.
- 136. (New) The method of claim 85, wherein the electrochemical reaction of said diazonium specie occurs at a junction between said first plurality of nanotubes and said second plurality of nanotubes.